

## **REMARKS/ARGUMENTS**

This response is respectfully submitted in reply to the non-final Office Action dated April 6, 2004. The deadline for responding to the Office Action has been extended to October 6, 2004 by way of a request for a three month extension of time submitted herewith.

### **I. Introduction**

Claims 1-52 are pending. Claims 10, 16, 17, 23, 24, 31, 32, 36, 49 and 50 have been amended.

In the Office Action the Examiner rejected claims 1, 2, 3, 8-11, 18 and 19 under 35 U.S.C. §103(a) as being unpatentable over the Examiner proposed combination of U.S. Patent No. 6,373,855 (hereinafter "the Downing et al. patent"), in view of U.S. Patent No. 6,175,822 (hereinafter "the Jones patent") in further view U.S. Patent No. 6,172,672 (hereinafter "the Ramasubramanian et al. patent")

With regard to dependent claims 4-6, which depend from claim 1, the Examiner rejected these claims under 35 U.S.C. 103(a) based on the combination of reference used to reject claim 1 in further view of U.S. Patent No. 6,477,201 (hereinafter "the Wine et al. patent"). With regard to dependent claim 7, which also depends from claim 1 the Examiner rejected this claim under 35 U.S.C. as being unpatentable over the Downing et al. patent in

view of U.S. Patent No. 5,327, 176 (hereinafter "the Forler patent").

With regard to the remaining claims, the Examiner asserts "Claims 12-17 and 21-52 do not teach any new limitations above claims 1-11, 18 and 19 and therefore rejected for the above mentioned reasons." (Office Action Page 5).

In each of the Examiner's claim rejections, the Downing et al. patent is used as the principle reference. As will be discussed below, even if made, the resulting combination suggested by the Examiner would not anticipate or render obvious the subject matter of the pending claims. Furthermore, **the various references actually teach away from the claimed invention** with the Examiner's proposed combination being neither taught nor suggested by the prior art.

The Examiner's proposed combination would render the video transmission control mechanism taught by Downing et al. unusable since the basic operation of this principle reference relies on audio information being available for control of the video transmission. Stopping the audio, as required by the Examiner's proposed combination, would render the audio based transmission control mechanism taught by Downing et al. unusable given that the audio would no longer be available. Thus, by teaching a control mechanism which uses audio information, the Downing et al. patent expressly teaches away from the Examiner's proposed combination and one of ordinary skill in the art would not be motivated to make the modifications

suggested by the Examiner.

The invention, applied references, and the various claims will be discussed in detail below.

## **II. Summary of the Invention and Discussion of the Applied References**

### **1. The Present Invention**

Various embodiments of the present invention are directed to methods of delivering video from a server to a client. Other embodiments are directed to computer-readable medium carrying one or more sequences of instructions for delivering digital video from a server to a client.

In various exemplary embodiments, a server transmits one or more digital streams to a client. In at least one exemplary embodiment the one or more digital streams include at least a portion of video information and audio information and the transmission of the audio and video information consumes bandwidth between the server and the client. In accordance with the invention, the server may receive a signal indicating that transmission of a particular type of information, e.g., audio information, is to cease and thus not to be sent to the client.

In some embodiments of the invention, the server responds to the signal indicating that the transmission of a particular type of information, e.g., audio information, is to cease **by stopping the**

transmission of the particular type of information and by using the bandwidth that would have been used by the particular type of information to send other information to the client. For example, in response to a signal that audio information should not be sent to the client, the server may respond by not only ceasing the transmission of the audio information to the client **but also by using the bandwidth that would otherwise have been used to send the audio information to the client to send other information to the client, e.g., improved video information.** In some embodiments, this involves sending video information that has a higher quality than the video information sent to the client prior to receiving the signal to stop sending audio information. The bandwidth is used in some other embodiments to transmit other information to one or more clients in a set of clients that includes the client to which the transmission of the particular type of information is stopped.

The applied references, alone or in combination, do not teach, disclose or suggest the novel response of the invention to a signal to stop the transmission of a particular type of information, e.g., audio information, which involves responding by using the bandwidth made available by stopping the transmission, to transmit other information, e.g., to the client to which the transmission of the particular information was stopped. The applied references describe the use of different specific control signals to adjust transmission rates or the use of a specific signal to stop the transmission of audio information. The

various references, if combined, would still produce a system which uses signals to adjust transmission rates which are different from signals which are used to stop the transmission of a particular type of information, e.g., audio information.

## 2. The Downing et al. Patent

The Downing et al. patent describes a system and method for allocating video bandwidth of a channel that carries **both** video and audio information. The quality of a video signal received over the channel is changed based upon the quality of the received audio signal. (See Abstract) The change may be in response to a message instructing the sender to change the video bandwidth of the A-V signal based on the quality of the A-V signal received at the A-V recipient. (See col. 5, lines 39-44) In various embodiments in the Downing et al. patent, such as the one shown in Fig. 3, when the audio falls below a first quality threshold video bandwidth may be reduced while if the audio quality exceeds a threshold, video bandwidth may be increased. (See Fig. 3)

Notably, the Downing et al. patent does not discuss a signal indicating that a transmission of a particular type of information should cease, e.g., audio should not be sent, nor does it suggest or discuss how a server should respond to such a signal. This may be due to the fact that in the Downing et al. patent, the presence of an audio signal is important so that its quality can be determined and used for controlling the video signal.

Accordingly, the Downing et al. patent fails to teach, disclose or suggest the numerous features of the pending claims which address responding to a signal to cease transmission of a particular type of information, e.g., audio information.

### 3. The Jones Patent

The Jones patent describes a method and system for providing network based transcription of speech signals (See Abstract) It does not address the transmission of audio and video signals together and does not mention video at all.

The Jones patent indicates that a server should stop streaming a file in response to a signal from a client to "pause" or "stop" playing the streamed file. In particular, the Jones patent states:

The process of streaming audio or video files is well known to those skilled in the art and involves transmitting the files to a receiving end when instructed by the receiving end. For instance, the receiving end may instruct the transmitting end to "play" (stream) an audio file. ... At any time, the receiving end may then instruct the transmitting end to "pause" or "stop" playing the streamed signal, in which case, the transmitting end may stop transmitting the audio file (or may finish filling the available buffer at the client), and the receiving end will stop playing the buffered signal. (Col. 5 lines 55- col. 6, line 3)

Accordingly, the Jones patent indicates that a server should stop sending a file, such as an audio file, in response to a "pause" or "stop" signal. **It does not teach or suggest how to use bandwidth that would otherwise have been used to send audio information if the audio signal was not stopped.**

#### 4. The Ramasubramanian et al. Patent

The Ramasubramanian et al. patent, **which is devoid of any reference to audio**, describes a system where video having an initial image quality is transmitted to the client over a communication medium with a limited bandwidth. While transmitting the video to the client, the server receives a message from the client that indicates selection of a second slower frame rate. In response to the message from the client, the server determines a second image quality that allows the video to be displayed.

**The Ramasubramanian et al. patent teaches that messages used to implement changes in the rate at which frames should be sent should be responded to by corresponding changes in image quality.** The Ramasubramanian et al. patent does not address the issue of when transmission of a particular type of information is to cease. Thus, it can not anticipate or suggest the various features of the invention which relate to ceasing the sending of a particular type of information, e.g., audio information. **Notably, the Ramasubramanian et al. patent is devoid of any mention of a signal indicating audio information should not be**

**sent to a client or how a system should respond to such a signal.**

**5. The Wine et al. Patent**

The Wine et al. patent is directed to a method and apparatus for providing selective enhancement and/or degradation of an information frame using content-based, regional analysis techniques. (See Summary) The Wine et al. Patent, which generally deals with video coding, does not discuss how to respond to a signal indicating that transmission of a particular type of information, e.g., audio information, should cease.

Notably, the Wine et al. patent does not discuss a signal indicating that audio should not be sent nor does it suggest or discuss how a server should respond to such a signal. Accordingly, alone or in combination with the other references it does not anticipate or render obvious the pending claims.

**6. The Forler et al. Patent**

The Forler et al. patent does not address transmission of signals from a video server to a client but is instead directed to a television signal processing system for processing a Video In video component and an Audio In audio component. (See, col. 2, lines 26-35) The system includes provisions for decoding an auxiliary information signal component, such as closed captioning data, contained in the video component of the television signal and for including the auxiliary information

signal, e.g., closed captioning information, in the video output signal when the audio output signal is inhibited or disabled, e.g., muted. (See col. 1, line 64 - col. 2, line 9) In the Forler et al. patent separate audio and video output are provided. Including closed captioning information in the video output does not involve the use of bandwidth corresponding to the audio output.

In contrast to the present invention which addresses the transmission of information, e.g., audio and video information from a server to a client and the use of bandwidth used to transmit such information, the Forler et al. patent is directed to a muting and closed captioning function for use in a television system which receives both the audio and video information regardless of whether the mute option is selected.

Given that the Forler et al. patent does not discuss the use of bandwidth used to output audio signals for another purpose when audio is muted and, given that it does not discuss stopping the transmission of information from a server to a client, it in no way anticipates or renders obvious the various features of the present invention.

### **III. The Pending Claims Are Patentable**

#### **1. Representative Claim 1 is Patentable**

Claim 1 is directed to a method of delivering digital video from a server to a client. Representative claim 1 recites:

A method for delivering digital video from a server to a client, comprising the steps of: **transmitting one or more digital streams to said client, said one or more digital streams comprising at least a portion of video and audio information**, wherein transmitting said one or more digital streams consumes bandwidth between said server and said client; **receiving a signal indicating that audio information is not to be sent to said client**; **in response to said signal, said server ceasing transmission of said audio information to said client and using bandwidth that would otherwise have been used to send said audio information to send other information to said client.**

Thus, claim 1 requires receiving a signal indicating that audio information is not to be sent and, and **in response to said signal indicating that audio is not to be sent, ceasing transmission of said audio information to said client and using bandwidth that would otherwise have been used to send said audio information to send other information to said client.**

The Examiner rejected claim 1 based on the Downing et al. patent when considered in combination with the Jones patent and the Ramasubrananian et al. patent.

Applicants respectfully submit that the Jones patent which is directed to the field of audio transcription devices is in a non-analogous field of art which one of ordinary skill in the art, addressing problems associated with transmitting video streams including both video and audio components, would not

**look.** Since the Jones patent is in a non-analogous art field, the obvious rejection based on the combination of the Jones patent and the other references is improper and should be withdrawn. See, MPEP Section 2141.01(a) which discusses the need for the combined references to be in an analogous field of art.

In the Office Action the Examiner recognizes the serious deficiencies of the Downing patent stating:

Downing teaches allocating extra bandwidth to video based upon audio bandwidth(column 4). **Downing fails to explicitly teach wherein a signal is received indicating that audio information is not to be sent to said client, and in response to said signal, said server ceasing transmission of said audio information to said client and using bandwidth that would otherwise have been used to send said audio information to said client to send other information to said client, and using at least some of the bandwidth to send other information includes sending video information that has a higher quality than video information sent prior to receiving said signal.** However, Ramasubramanian, teaches a client sending a message to a server indicating a higher quality video image to be sent to client (Abstract, column 4 line 50 - column 5 line 20 and column 6 line 24 -column 7 line 25). Jones teaches network based audio transmission wherein a receiving end can instruct a transmitting end to stop audio transmission (Jones; column 5 line 50-column 6 line 10). (Office Action pages 2-3, bold added for emphasis)

The Examiner proceeds to reject claim 1, and various other claims asserting:

**It would have been obvious for one of ordinary skill in the art to modify Downing to allow for the client to indicate higher quality video be sent from the server as per the teachings of Ramasubramanian and that this indication instruct that audio not be sent as per the teachings of Jones so that the bandwidth can then be allocated to video thus allowing for higher quality video transmission to the client. (Office Action page 3)**

While Applicant agrees with the Examiner regarding the numerous deficiencies of the Downing et al. patent, Applicant respectfully disagrees that the applied references would result in the claimed combination.

The Downing et al. and Ramasubramanian et al. patents teach the use of specific signals to control changes in the supply of video information to the client described in the references. **The described control signals in these references do not indicate that a particular type of information, e.g., audio or video information, should cease to be transmitted.** While the Jones patent teaches a halt or stop control signal used to stop the transmission of a particular type of information, i.e., audio information, this reference merely teaches that the server should respond to the signal to cease the transmission by stopping the transmission.

None of the references cited by the Examiner teach, disclose or suggest responding to a signal indicating that a particular type of information, e.g., audio information, is not to be sent, by **ceasing**

**transmission of said audio information to said client and using bandwidth that would otherwise have been used to send said audio information to send other information to said client.**

Applicant does not claim that the transmission of a signal indicating that transmission of a particular type of information should cease is novel. However, **the claimed combination of features and the novel response to a signal to cease transmission of information recited in the pending claims is clearly NOT anticipated or rendered obvious by the applied references.**

The combination of references cited by the Examiner teach the use of different control signals to achieve different purposes. Changes in a transmitted type of information are achieved with control signals designed to change that particular type of signal transmission while cessation of a transmission is achieved by a stop or pause signal which results in response which involves the stopping of the transmission but not in the use of the bandwidth for another transmission to the client. Accordingly, even if combined, the references do not teach or disclose the claimed response.

Furthermore Applicants respectfully submit that there is no motivation or teaching in the references to make the combination suggested by the Examiner. **In the Downing patent, the presence of an audio signal is important so that its quality can be determined and**

used for controlling the video signal. The Examiner has failed to explain why one of ordinary skill in the art would be motivated to modify the Downing patent to cease the transmission of an audio signal which is part of an A/V signal thereby rendering the described control mechanism (See Fig. 3) which is based on the audio component of the A/V signal inoperative due to the lack of an audio component.

If the Examiner persists in the rejection based on the Downing patent Applicant's respectfully request that the Examiner explain what in the applied references suggests that it would be beneficial to allow the cessation of audio transmission while continuing video transmissions in the Downing patent.

## 2. The Remaining Claims Patentable

Claims 2-9 depend from claim 1 and are patentable for the same reasons claim 1 is patentable. Applicant respectfully submits that the Wine et al. patent, which was cited in rejecting various dependent claims in combination with the Downing et al. patent, merely describes various encoding features relating to image quality and does not make up for the numerous deficiencies that are discussed above of the other references cited by the Examiner. Similarly, the Forler et al. patent which describes the use of closed captioning when a mute option is selected in a television system but does not discuss using the bandwidth that would have been used by the audio signal for some other

signal, in no way makes up for the above noted deficiencies in the applied references.

In each of the rejections, the Downing et al. patent is used as the principle reference. Accordingly, the rejections of all the pending claims, i.e., claims 1-52 are based on various combinations of references which are all deficient for the same general reasons that the combination used to reject claim 1 is deficient.

In view of the above amendments, the arguments made with regard to the patentability of claim 1 are also generally applicable to the remaining claims. Accordingly, it is respectfully submitted that none of the pending claims are anticipated or rendered obvious by the applied references whether considered alone or in combination.

#### **IV. Conclusion**

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicant requests that the Examiner pass this application to issue.

Respectfully submitted,

  
Michael P. Straub  
Michael P. Straub, Attorney  
Reg. No. 36,941  
Tel.: (732) 542-9070

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**CERTIFICATE OF MAILING under 37 C.F.R. 1.8(a)**

I hereby certify that this correspondence is being deposited on September **October 5, 2004** with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Michael P. Straub  
Michael P. Straub

36,941  
Reg. No.